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Limiting analytical solutions for complex saturated and unsaturated transport problems

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Abstract

Non-linear diffusion and velocity-dependent dispersion problems are under consideration. The necessary and sufficient conditions allowing the comparison of solutions to the two dimensional convection-dispersion equations with different coefficients are obtained. These conditions provide a framework within which solutions to the complex non-linear problems mentioned above can be estimated by solutions to the problems possessing analytical solvability. © 1994 Kluwer Academic Publishers.

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Keywords

hydrodynamic dispersion, nonlinear parabolic equation, unsaturated flow